**Uart protocol test**

**ตัวอย่างการรับส่งข้อมูล ผ่าน uart ใน data frame ทั้ง 3 แบบ**

Table

Description automatically generated

Text

Description automatically generated

Text, letter

Description automatically generated

Mode 1: frame #2

TX:

Start ,Mode = 0b10010001 (145)

Dataframe(2 Byte) = 0b00000001 (1), 0b00000001 (1)

Check sum = ~(145 + 1 + 1) = ~147 (~0b10010011) = 0b01101100



Mode 2: frame #1

TX:

Start, Mode = 0b10010010 (146)

Check sum = ~146 (~0b10010010) = 0b01101101

RX:

Ack #1 = 0x58 (0b01011000), 0b1110101



Table

Description automatically generated

Mode 3: frame #1

TX:

Start, Mode = 0b10010011 (147)

Check sum = ~147 (~0b10010011) = 0b01101100

RX:

Ack #1 = 0x58 (0b01011000), 0b1110101



Graphical user interface, application, table, Excel

Description automatically generated

Mode 4: frame#2

TX:

Start, Mode = 0b10010100 (148)

Dataframe (1 Byte) = 0b00000110 (6)

Check sum = ~(148+6) = ~154 (~0b10011010) = 0b01100101

RX:

Ack #1 = 0x58 (0b01011000), 0b1110101



Table, Excel

Description automatically generated

Mode 5: frame#2

TX:

Start, Mode = 0b10010101 (149)

Dataframe (2 Byte) = 0b00111101 (61), 0b00010010 (18)

1.5634 rad 🡪 15634 (0b111101 00010010)

Check sum = ~(149+61+18) = ~228 (~0b11100100) = 0b00011011

RX:

Ack #1 = 0x58 (0b01011000), 0b1110101



Graphical user interface, table, Excel

Description automatically generated

Mode 7: frame#3

TX:

Start, Mode = 0b10010111 (151)

N station (1 Byte) = 5 (0b00000101)

Dataframe (3 Byte) = 0b0010 0001 (33), 0b0100 0011 (67), 0b0000 0101(5)

🡪 (2,1), (4,3), (0,5)

Check sum = ~(151+5+33+67+5) = ~261 (~0b00000101) = 0b11111010

RX:

Ack #1 = 0x58 (0b01011000), 0b1110101

Table

Description automatically generated

Mode 11: frame#1

TX:

Start, Mode = 0b10011011 (155)

Check sum = ~155 (~0b10011011) = 0b01100100

RX:

Ack #1 = 0x58 (0b01011000), 0b1110101

Start, Mode = 0b10011011 (155)

Dataframe (1 Byte) = 0b00000110 (6)

Check sum = ~(155+6) = ~161 (~0b 10100001) = 0b01011110



Table

Description automatically generated

รอ ack#1 จาก master

TX: Ack #1 = 0x58 (0b01011000), 0b1110101



Table

Description automatically generated

กลับสู่ idle state